

Title 24: Siplast And The State of California Energy Code Requirements



Title 24, Part 6, Of The California Code Of Regulations

Title 24 of California's Energy Efficiency Standards for Residential and Nonresidential Buildings is a wide-ranging "green" construction bill that became effective in October 2005. Title 24 specifies that new and replacement commercial roofs – virtually any low-slope roofing project that requires a construction permit – must meet minimum initial thermal emittance and minimum initial solar reflectance requirements. These requirements can be referenced at <http://www.energy.ca.gov/title24/>.

California Title 24, Part 6 Defines A Cool Roof

As One That:

1. Has ≥ 0.70 reflectance (70%).
2. Has ≥ 0.75 emittance (75%).
3. Was tested and rated by the CRRC (Cool Roof Rating Council), and bears the CRRC label. (see Cool Roof Rating Council below. Products without a CRRC label are considered to be black [0.10 reflectance] by default.)
4. Has an insulated roof deck beneath the roof membrane that provides a thermal value meeting the prescriptive requirements determined by climate zone and reflectance/emittance values of the specified roof membrane system.

Basic Options For Compliance Are:

1. Meet the prescriptive requirements for reflectance and emittance, 0.70 and 0.75 respectively.
2. Use the prescriptive calculation in section 143 to determine the additional insulation required to off-set the need for a high reflectance roof membrane.
3. Use the performance approach, which requires enlisting the services of a California Building Energy Consultant (CABEC).

Siplast Membrane Products That Meet The Prescriptive Criteria Of Title 24, Part 6:

- Paradiene 30 CR FR.
- Paradiene 30 CR FR TG.
- Parapro Roof Membrane - white color.
- Paradiene 40 CR FR.
- Paradiene 40 CR FR TG.
- PC-227 Elastomeric Roof Coating - white color.



Cool Roofs And Insulation

Roof insulation placed beneath the roof deck offers a practical, long-term energy savings option. Adding insulation R-value to offset the need for a high reflectance membrane can be a good investment. The use of standard membranes with incremental increases in insulation thickness may provide equal or better energy-savings results. Assessments for additional R-value are determined by using the prescriptive calculation in Title 24, Part 6.

Prescriptive Criteria For Non-Residential New Construction And Reroof Calculator

A calculator is available to quickly determine the energy-equivalent R-value of insulation needed to meet title 24 requirements if a building owner chooses not to install a cool roof during a reroofing project.

Developed by the Asphalt Roofing Manufacturers Association (ARMA) in conjunction with Oak Ridge National Laboratory and the Energy Commission, the calculator takes into account the level of existing insulation, the climate zone, and several other factors that determine the proper R-value of required insulation.

The calculator can be found on the ARMA Web site, asphaltroofing.org.

Cool Roof Rating Council

The Cool Roof Rating Council (CRRC) is an independent organization that lists the solar reflectance and thermal emittance specifications for many roofing products. CRRC is a resource for building officials, energy service providers, architects and specifiers, property owners, and community planners.

The CRRC Web site is at www.coolroofs.org.



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